TORONTO

STAFF REPORT
ACTION REQUIRED

Supplementary Report – Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (EA) and Integrated Urban Design Study

Date:	June 4, 2015
To:	City Council
From:	John W. Livey, Acting City Manager
Wards:	Ward 28 – Toronto Centre-Rosedale Ward 30 – Toronto-Danforth
Reference Number:	P:\2015\ClusterB\WF\CC15003

SUMMARY

This report responds to a request by the Public Works and Infrastructure Committee (PWIC), at its Special Meeting of May 13, 2015, for a report directly to City Council on additional strategies to (1) enhance the Hybrid option and (2) mitigate the congestion impacts of the Remove option, as part of its consideration of "Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (EA) and Integrated Urban Design Study – Updated Evaluation of Alternatives" (Gardiner East EA). See: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW4.1

The May 6, 2015 Gardiner East EA staff report recommended that City Council make a decision on a preferred EA alternative, either the Hybrid or the Remove. The additional findings presented in this report will further inform City Council on the potential merits and implications of the two alternatives in making a decision. The relevant strategies identified in this report can be further developed for the preferred alternative as part of the Alternative Designs stage of the EA.

RECOMMENDATIONS

The Acting City Manager recommends that this report be received for information.

FINANCIAL IMPACT

There are no direct financial implications associated with receipt of this report. The Financial Impact of selecting and implementing a preferred alternative for the east section of the Gardiner Expressway is detailed in the May 6, 2015 staff report at: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW4.1

If implemented, the relevant strategies discussed in this report could alter the capital, maintenance and operating costs of the EA alternatives considered by PWIC on May 13, 2015. The Deputy City Manager and Chief Financial Officer, in consultation with the appropriate officials, will report as part of the 2016 Budget process on implementation funding for the preferred EA alternative following completion of the preferred design and the resulting refined capital cost estimates.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At a Special Meeting on May 13, 2015, Public Works and Infrastructure Committee considered a report "Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (EA) and Integrated Urban Design Study – Updated Evaluation of Alternatives (PW4.1)." In so doing, PWIC forwarded the report to Council without recommendation, and directed the Acting City Manager to report directly to City Council on:

1. Additional strategies to enhance the Hybrid option, such as:

    a. the location and/or necessity of expressway on/off ramps east of Jarvis Street;

    b. opportunities to enhance the areas underneath and beside the elevated expressway and on/off ramps; and

    c. opportunities to improve the streetscape of Lake Shore Boulevard, including opportunities to improve pedestrian safety.

2. Additional strategies to mitigate the congestion impacts of the Remove alternative, including:

    a. Additional travel lanes on Lake Shore Boulevard;

    b. Pedestrian overpasses at key intersections on Lake Shore Boulevard; and

    c. Any other opportunities to reduce vehicle travel times.

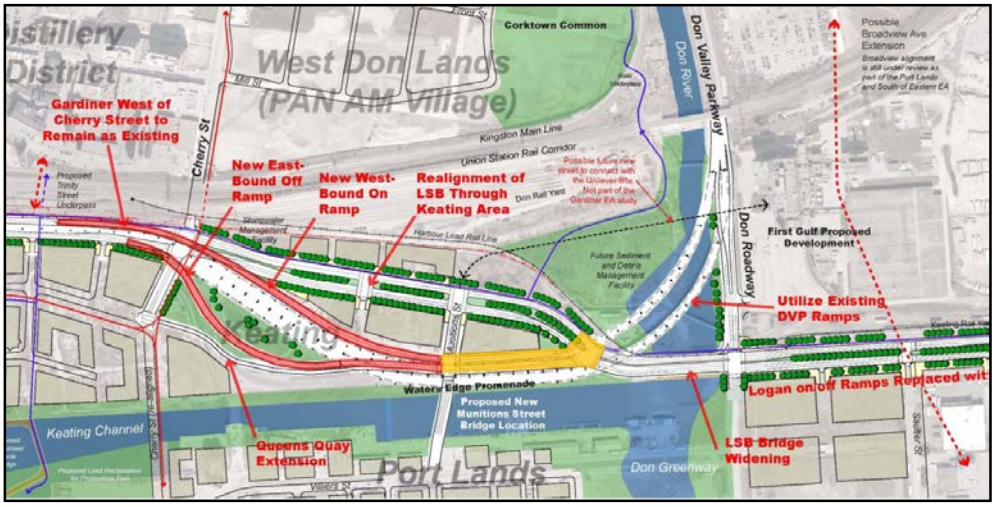
COMMENTS

1. Strategies to Enhance the Hybrid Alternative

(a) Location and/or Necessity of Expressway On/Off Ramps East of Jarvis Street

The Hybrid alternative considered by PWIC on May 13, 2015 would remove the 750-metre eastbound Gardiner Expressway to Lake Shore Boulevard off-ramp and the 850-metre westbound on-ramp, both in the vicinity of Logan Avenue (known as the Logan ramps). These on/off ramps would be replaced by two new ramps of two lanes each in the Keating Precinct just east of Cherry Street, consisting of a 425-metre eastbound off-ramp and a 470-metre westbound on-ramp, as illustrated in Figure 1. The new on/off ramps would connect to Lake Shore Boulevard via a new approach road that would be built beneath the westbound lanes of the Gardiner and to the north of the elevated structure. A new intersection would be created at Lake Shore Boulevard beneath the ramps connecting the Gardiner to the Don Valley Parkway (DVP). The new Gardiner on/off ramps and access road would occupy approximately 5.5 acres within the Keating Precinct.

Figure 1: Hybrid EA Alternative – Proposed New Ramps East of Cherry Street



Hybrid Without New On/Off Ramps at Cherry Street

At the PWIC meeting, concerns were expressed about the impact of the proposed Cherry Street on/off ramps on the Keating Precinct, along Cherry Street and on the Keating Channel water's edge pedestrian promenade in particular. Therefore, the project team examined the feasibility and implications of not including both or one of the proposed Hybrid on/off ramp(s) in order to eliminate or reduce the impacts on the approved streets and blocks plan for the Keating Precinct.

By removing the existing Logan on-ramp and not providing a new westbound Gardiner on-ramp at Cherry Street, westbound traffic on Lake Shore Boulevard would have to use the existing on-ramp at Jarvis Street to access the Gardiner. It is expected that the volume of traffic that would access the existing Jarvis Street on-ramp would be significantly less than that of the Logan on-ramp today as 75% of AM peak-hour traffic volumes on the Logan on-ramp are destined to downtown locations and would therefore likely remain on Lake Shore Boulevard to reach their destinations (vehicles using the Jarvis on-ramp cannot exit to the Yonge/Bay/York off-ramp). Similarly, by removing the existing Logan off-ramp and not providing a new eastbound Gardiner off-ramp at Cherry Street, eastbound traffic on the Gardiner wanting to access Lake Shore Boulevard would need to exit at the existing Jarvis Street off-ramp.

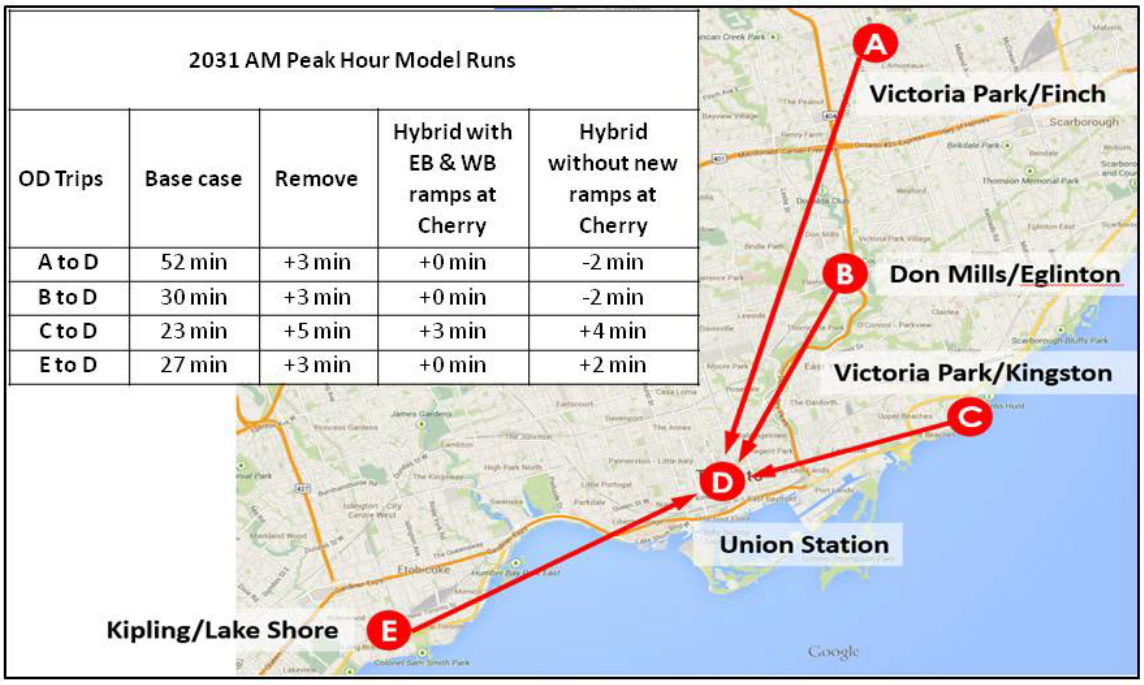
AM Peak Hour Travel Time for Hybrid in 2031 Without New Ramps at Cherry Street

The EA consultant ran a transportation model to reflect a Hybrid configuration without the Logan ramps and without new on/off ramps at Cherry Street. Under this Hybrid configuration, travel times for the AM peak hour in 2031, as compared to the Hybrid with new ramps, would increase by approximately one minute from Victoria Park/Kingston to Union Station (C to D) and two minutes from Kipling/Lake Shore to Union Station (E to D), as shown in Table 1 below.

As shown in Table 1, with the elimination of the on/off ramps at Cherry Street, travel times would decrease by two minutes for travel from Victoria Park/Finch to Union Station (A to D) and from Don Mills/Eglinton to Union Station (B to D) when compared to the travel times for the Hybrid (with new ramps) configuration. This reduction in AM peak-hour travel times for trips coming south along the DVP is a result of the elimination of vehicles entering the Gardiner from the east (either through the existing Logan westbound on-ramp or the proposed new Cherry Street westbound on-ramp), thus allowing for a better flow of traffic and improved travel times from southbound DVP to the westbound Gardiner.

Table 1: Auto Travel Times for Hybrid Without New Ramps in AM Peak Hour, 2031

2031 AM Peak Hour Model Runs				
OD Trips	Base case	Remove	Hybrid with EB & WB ramps at Cherry	Hybrid without new ramps at Cherry
A to D	52 min	+3 min	+0 min	-2 min
B to D	30 min	+3 min	+0 min	-2 min
C to D	23 min	+5 min	+3 min	+4 min
E to D	27 min	+3 min	+0 min	+2 min



PM Peak Hour Travel Time for Hybrid in 2031 Without New Ramps at Cherry Street

To date, the traffic assessment has focused on the travel time implications of the various options during the critical AM peak hour. To achieve a better understanding of the overall impacts of these options, traffic modelling runs were undertaken for the PM peak hour for the Hybrid option with new ramps at Cherry Street and for the Hybrid option without new ramps at Cherry Street. This PM peak hour model analyzes travel time differences only within the EA transportation study area.

The PM peak hour analysis determined travel times from a central location in the study area to the north, east and west limits of the study area. As shown in Table 2 below, the results indicate that without the new on/off ramps at Cherry Street, the outbound travel times for the Hybrid option will increase by one minute to the east (to Queen/Woodbine), two minutes to the north (to the DVP at Dundas) and four minutes to the west (to the Gardiner at Spadina), compared to the outbound travel times for the Hybrid option with ramps at Cherry Street.

In addition to the impact of outbound trips originating in the study area, the PM peak hour analysis also examined the impact of the Hybrid option (with and without the new ramps at Cherry Street) on trips travelling through the length of the Gardiner/Lake Shore corridor (i.e., not originating in or destined to the downtown area).

Table 2: Auto Travel Times for Gardiner East EA Options in PM Peak Hour, 2031

Travel Trip	Maintain Base Case	Hybrid with New Ramps	Hybrid without New Ramps
Outbound Trips			
Front/Parliament to Spadina/Gardiner	12 min	-3 min	+1 min
Front/ Parliament to DVP/Dundas	7 min	+0 min	+2 min
Front/Parliament to Queen/Woodbine	12 min	+1 min	+2 min
Through Trips			
Queen/Woodbine to Spadina/Gardiner	10 min	+1 min	+9 min
DVP/Dundas to Spadina/Gardiner	7 min	-2 min	-2 min
Spadina/Gardiner to DVP/Dundas	6 min	+0 min	+3 min

The through trip most impacted under the Hybrid option without the new ramps at Cherry Street is the westbound through trip. The model forecasts that a through trip under the Maintain base case in the PM peak hour starting at Queen/Woodbine would require approximately 10 minutes to travel, via Lake Shore Boulevard and the Logan on-ramp, to a point on the Gardiner at Spadina, for destinations further west. In comparison to the Maintain, if the Hybrid includes a new westbound on-ramp at Cherry Street, an additional one minute of travel time is required to travel, via Lake Shore Boulevard, to the new Cherry Street westbound on-ramp to the Gardiner. Without a new westbound Cherry Street on-ramp, an additional nine minutes is required over the Maintain. This trip would involve travelling on Lake Shore Boulevard to the Jarvis Street on-ramp, which is already congested, enter and merge with Gardiner traffic, and get to a point on the Gardiner at Spadina.

Considering the east-to-west through trip in the PM peak hour without new ramps at Cherry Street is forecast to have a significant increase in travel time, a new westbound on-ramp for the Hybrid alternative would appear to be important from a traffic capacity and service perspective. A westbound on-ramp only concept is discussed below.

Impacts of Hybrid Without Ramps at Cherry Street on Keating Precinct

Without new on/off ramps at Cherry Street, Hybrid would facilitate urban design improvements in the Keating Channel Precinct, along Cherry Street and the Keating Channel water's edge pedestrian promenade in particular. The Keating Precinct Plan assumed 8.5 acres could be developed with the retention of the elevated expressway. Hybrid without new ramps would provide the same 8.5 acres of redevelopment area, three acres more than the Hybrid with two new ramps. Without new ramps at Cherry Street, the new road required to access the ramps would also not be needed, thus permitting a better pedestrian connection between the water's edge and the realigned Lake Shore Boulevard. Further, land parcels along Cherry Street and the Keating Channel could be redeveloped without the additional constraints of the new ramps.

Based on preliminary cost estimates, it is anticipated that not constructing new on/off ramps just east of Cherry Street could reduce the cost of the Hybrid alternative by

approximately $50 million in capital costs, plus $30 million in operating and maintenance costs (all figures $2013). In Net Present Value dollars (NPV), these costs would be approximately $36 million for capital and $6.8 million for operating and maintenance.

New Hybrid With Westbound On-Ramp Only

The project team also examined the option of constructing a Gardiner westbound on-ramp east of Cherry Street only (i.e., no new eastbound off-ramp). As shown in Figure 2, instead of being located south of Lake Shore Boulevard along the north edge of the Gardiner, the proposed westbound on-ramp could be located to run along the north side of the realigned Lake Shore Boulevard. The ramp would rise and cross overhead above the boulevard to connect with the elevated Gardiner at Cherry Street. This Hybrid alignment would avoid redevelopment parcels south of the realigned Lake Shore Boulevard. It would also eliminate the need for the access road and new intersection that would both be required to access the westbound on-ramp for the Hybrid alternative (shown in Figure 1).

Figure 2: Alternative Hybrid With Westbound On-Ramp Only

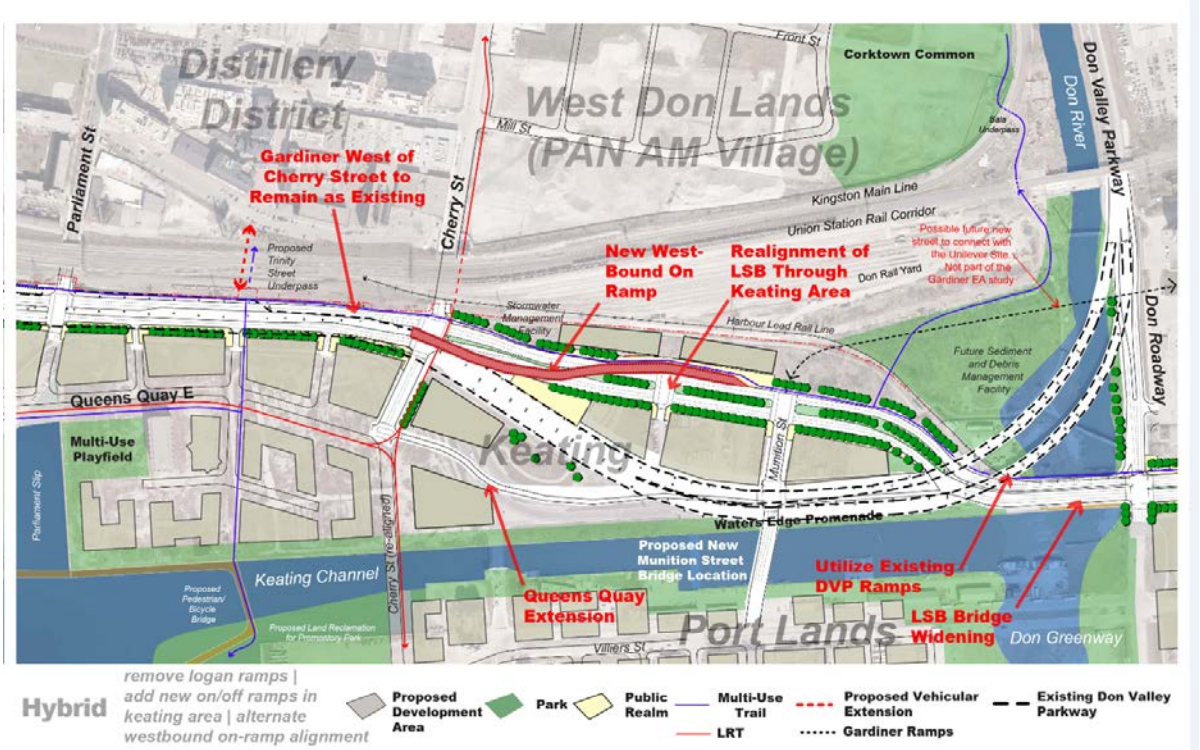
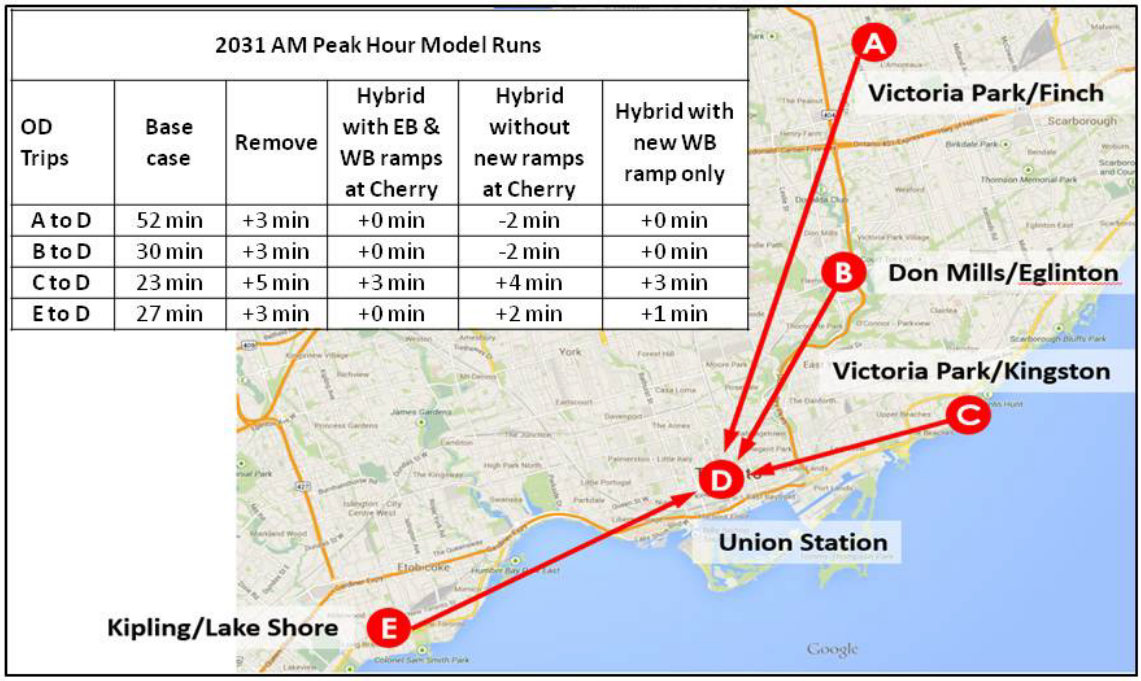


Table 3, below, details travel time differences for Hybrid in the AM peak hour with a westbound on-ramp only, compared to Hybrid with two new ramps and no ramps. The travel times for trips from A, B and C remain the same as the option with both the westbound on-ramp and the eastbound off-ramp at Cherry Street. The trip time from E

(Kipling / Lake Shore) increases by one minute when compared to Hybrid with two new ramps. As previously discussed, it is also expected that the benefit of a new westbound on-ramp at Cherry Street would be even more pronounced in the PM peak period for the east-to-west through trip.

Table 3: Auto Travel Times for Hybrid Westbound-On-Ramp Only in AM Peak Hour, 2031

2031 AM Peak Hour Model Runs					
OD Trips	Base case	Remove	Hybrid with EB & WB ramps at Cherry	Hybrid without new ramps at Cherry	Hybrid with new WB ramp only
A to D	52 min	+3 min	+0 min	-2 min	+0 min
B to D	30 min	+3 min	+0 min	-2 min	+0 min
C to D	23 min	+5 min	+3 min	+4 min	+3 min
E to D	27 min	+3 min	+0 min	+2 min	+1 min



The implementation of Hybrid with a westbound on-ramp only at Cherry Street, located north of the realigned Lake Shore Boulevard, would facilitate urban design improvements south of Lake Shore Boulevard relative to the Hybrid with both on/off ramps. Land parcels along Cherry Street and in proximity to the Keating Channel could be redeveloped, and public realm improvements such as the Keating Channel water's edge promenade could be implemented beneath the elevated expressway. However, north of Lake Shore Boulevard, the new westbound on-ramp would have an impact on the redevelopment potential of some of the anticipated parcels along the north of Lake Shore Boulevard. There would also be negative urban design consequences for Lake Shore Boulevard given the location of the new ramp, which rises to cross over top of the boulevard. Hybrid with a westbound on-ramp only at Cherry Street would provide 6.7 acres of land for redevelopment, 1.2 acres more than the Hybrid with two new ramps.

Based on preliminary cost estimates, it is anticipated that construction of a westbound on-ramp only at Cherry Street could reduce the cost of the Hybrid alternative by approximately $25 million in capital costs, plus $15 million in operating and maintenance costs (all figures $2013). In NPV, these costs would be approximately $18 million for capital and $3.4 million for operating and maintenance.

Improve Existing Jarvis Street Westbound On-Ramp

The project team examined the potential to increase the capacity of the existing Jarvis Street westbound on-ramp as a means of reducing travel time delays associated with the implementation of Hybrid without new on/off ramps at Cherry Street, as well as to improve safety conditions at the Jarvis and Lake Shore intersection. The proposal would involve expansion of the westbound on-ramp to two lanes from one. With this modification, it would be possible to move the entrance to the ramp further west from the Jarvis Street / Lake Shore intersection. It may also be possible to remove the southbound right-turn lane onto the existing ramp to normalize the intersection.

Modelling results for the 2031 AM peak hour indicated no travel time benefit from this Jarvis Street on-ramp widening for Hybrid without new ramps at Cherry Street. However, widening the Jarvis westbound on-ramp and improving Lake Shore Boulevard to facilitate a widened on-ramp is expected to offer some remedy to increased travel times of the westbound through trip under PM peak hour conditions. This could be explored in the next phase of the EA if the Hybrid is selected as the preferred EA alternative.

Notwithstanding travel time results, the proposed changes to the existing Jarvis on-ramp, including the access to this ramp, would improve safety conditions at the intersection of Jarvis Street and Lake Shore Boulevard, particularly for pedestrians. This intersection would benefit from a safety audit investigation, which could be undertaken as part of the next stage of the EA process if the Hybrid alternative is selected. Under Remove, the intersection would be completely reconfigured and safety concerns addressed.

Reconstruction of the westbound on ramp at Jarvis has been estimated at approximately $20 million. Given the limited AM peak travel time benefits of the proposal, the Alternative Designs stage of the EA would have to show significant PM peak travel time benefits and strong potential to improve safety in the vicinity of the Jarvis Street / Lake Shore intersection to justify this cost.

In conclusion, options related to the location and/or necessity of on/off ramps just east of Cherry Street can be further studied through the EA Alternative Designs stage if Hybrid is selected as the preferred alternative. The financial impact of the options would be detailed as part of the completion of the preferred design and the resulting refined capital cost estimates.

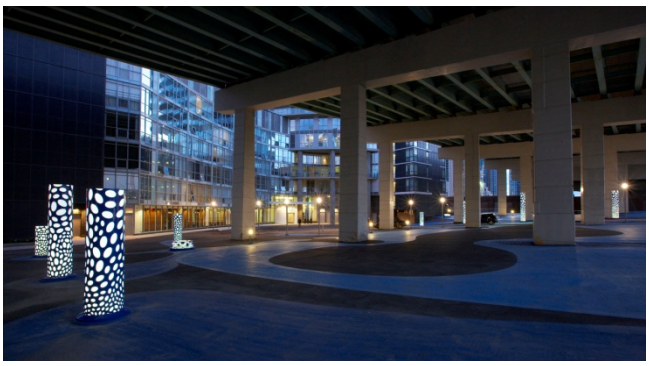
(b) Opportunities to Enhance the Areas Underneath and Beside the Elevated Expressway and On/Off Ramps

Lake Shore Boulevard East, along with the underside of the elevated Gardiner East, have not benefitted from the many City programs that have improved the public realm along Toronto's major roads in recent years. This has been because of the uncertainty related to the Gardiner East EA. As a result, the area remains bleak and unwelcoming. A Council decision on a preferred EA alternative will provide certainty on the future configuration

of the corridor and allow City staff to work with Waterfront Toronto in planning public realm improvements, consistent with Official Plan objectives for the waterfront.

Numerous local and international case studies demonstrate a wide range of possible enhancements, uses and activities. Recent local case studies include projects at the Mitosis Courtyard at City Place, the Onni development on Bathurst Street known as the "Garrison," the Fort York Visitors Centre and Underpass Park in the West Don Lands beneath the Richmond-Adelaide ramps.

Mitosis Courtyard, TORONTO



Onni Development, TORONTO

Fort York Visitors Centre, TORONTO

Underpass Park, TORONTO

International case studies include a skatebowl under the Burnside Bridge in Portland, public garden and recreation spaces in the East River Esplanade below Franklin D. Roosevelt Drive in Manhattan, a cycle and pedestrian trail edged by aluminum flowers in Glasgow and a glowing gallery of synthetic trees beneath a Sydney highway overpass.

Burnside Skatepark, Portland OREGON

East River Esplanade NEW YORK

Garscube Link, Glasgow SCOTLAND

Aspire, Sydney AUSTRALIA

Under Hybrid, the opportunity exists to improve Lake Shore Boulevard and to animate the underside of the elevated Gardiner throughout the EA study area. Opportunities include streetscaping, improvements to the underside of the expressway deck, lighting, public art, as well as active recreational facilities and programming. Under Remove, this work would be unnecessary as the elevated expressway would be removed. In future, the strategies discussed above could also be pursued along the entire length of the Gardiner/Lakeshore corridor, regardless of which Gardiner East EA alternative is selected as preferred.

Design concepts related to improving Lake Shore Boulevard East and to animating the underside of the Gardiner East could be developed as part of the Alternative Designs stage of the EA, and additional costs would be reported through the 2016 Budget process for the preferred EA alternative.

(c) Opportunities to Improve the Streetscape of Lake Shore Boulevard, Including Opportunities to Improve Pedestrian Safety

As above, opportunities to improve the streetscape of Lake Shore Boulevard can be examined more fully in the Alternative Designs stage of the EA. Streetscaping opportunities along the easterly section of Lake Shore Boulevard, from Cherry Street to the Don River, are similar for both Hybrid and Remove because both options have similar alignments for Lake Shore Boulevard. West of Cherry Street, while opportunities to improve Lake Shore Boulevard under the Hybrid option are limited by the expressway's columns and ramps, improvements can still be made.

The development and assessment of the Hybrid alternative included the study of measures to enhance pedestrian safety and improve the pedestrian environment. However, as with streetscaping improvements, opportunities to provide more generous east-west sidewalks and reduce north-south pedestrian crossing distances are constrained by the Gardiner's columns and ramps. Where intersections are being improved as part of the base case (at Sherbourne Street and Parliament Street) or in the event of implementation of the Hybrid option (at Cherry Street and the Don Roadway), they can be normalized and improved from current conditions. A further review of intersection configurations for the safe accommodation of pedestrians and cyclists under Hybrid can be examined more fully as part of the Alternative Designs stage of the EA.

2. Strategies to Mitigate the Congestion Impacts of the Remove Option

(a) Additional Travel Lanes on Lake Shore Boulevard

In 2013, as a result of concerns about travel time impacts related to the Remove alternative, the project team explored the potential to expand Lake Shore Boulevard from eight through-lanes to 10 through-lanes in order to determine the extent to which the additional travel times could be reduced. The traffic modelling of a 10-lane Remove configuration was completed prior to the optimization of the Remove alternative, thus the results could be different with the optimized Remove now under study. Traffic modelling for the 10-lane Remove configuration resulted in a decrease of three minutes for eastbound trips (from Spadina/FGE to Front/Parliament) but added one minute to travel time for south-to-west and westbound travel. The increases in travel time for the south-to-west and westbound trips as forecasted in the model are potentially attributed to more vehicles being attracted to the corridor under a 10-lane scenario.

Although some travel time reductions could be achieved with the addition of two through-lanes, the resulting increase in the pavement width of the roadway by approximately 6.6 metres would have other implications. The wider pavement would require more pedestrians to cross the road in two stages instead of one stage as with the eight-lane configuration. Furthermore, in the area between Small Street and Cherry Street, the existing road right-of-way would need to be widened to accommodate the 10-lane cross-section. Due to the proximity of the corridor to the railway embankment to the

north, an additional one-half acre of private property south of Lake Shore Boulevard would have to be acquired.

Considering these negative impacts, particularly the cost of land acquisition, the 10-lane configuration was not pursued previously. A 10-lane configuration for Remove could be assessed further, including under optimized conditions, in the Alternative Designs stage of the EA should Remove be the preferred alternative.

(b) Pedestrian Overpasses at Key Intersections on Lake Shore Boulevard

The optimized Remove option allows for approximately 67% of pedestrians to cross in one stage. It also normalizes intersections, which would improve pedestrian safety and comfort while crossing. Although pedestrian bridges over Lake Shore Boulevard might allow north-south "green times" for vehicle crossings to be reduced at certain intersections, the need for some amount of green time to accommodate these vehicle movements would remain and potential gains for additional east-west green times would be limited. There would also be significant considerations and potential constraints in the design and implementation of grade-separated pedestrian crossings, whether enclosed climate-controlled bridges or unenclosed walkways, as follows:

- There would be challenges in finding feasible horizontal and vertical alignments for pedestrian bridge(s) over Lake Shore Boulevard, particularly with the proximity to and the constraints created by the rail corridor;
- Ramps and/or elevators would be required to ensure that bridges are accessible and AODA-compliant;
- The separation of pedestrian and vehicular traffic would increase safety but if the bridges are not convenient, pedestrians would attempt to cross at-grade without adequate crossing time and protection. Therefore, for safety reasons, it would be necessary to provide minimum pedestrian walk times regardless, affecting the potential for increased east-west vehicular capacity;
- Pedestrian bridges are generally not preferred by pedestrians when at-grade options exist, unless they are fully climate-controlled, directly connected to buildings and/or part of a continuous pedestrian network or incorporated into adjacent developments such as the PATH;
- Pedestrian bridges would detract or obstruct view corridors along Lake Shore Boulevard;
- Clearances and available head room may not readily facilitate enclosed crossings and may require crossings at considerable elevation or open platforms; and
- Crossings would need to be movable to allow for Gardiner maintenance activities such as the recent Watermark Place enclosed bridge accessed in the Air Canada Centre.

Although staff were directed to examine the potential for pedestrian overpasses at key intersections, the feasibility of pedestrian underpasses could also be examined as part of

the Alternative Designs stage, should the Remove option be selected as the preferred EA alternative.

(c) Other Opportunities to Reduce Vehicle Travel Times

Numerous measures and strategies that could be considered to reduce vehicle travel times within the Gardiner/Lake Shore corridor have already been considered and incorporated as part of the optimization of the Remove option including:

- Signal timing optimization, coordination and modifications;
- Intersection reconfiguration; and
- Provision of separate turn lanes.

Other measures are already in the process of being implemented. For example, closed circuit cameras on arterial roads are being installed within the corridor to monitor traffic conditions in an effort to enable early detection of incidents and improved emergency response times, which may minimize vehicle travel times and disruptions.

The mitigating measures and strategies proposed for the Gardiner / Lake Shore corridor in conjunction with the Remove option could also be considered for implementation in other parts of the downtown area to reduce traffic congestion. Any such traffic management improvements could improve travel times along these alternate routes making them more attractive, and possibly reducing auto travel demand in the Gardiner/Lake Shore corridor.

CONCLUSION

Additional strategies to enhance the Hybrid option and mitigate travel time delays for the Remove option are outlined in this report. These strategies are intended to assist Council in selecting a preferred EA alternative for the Gardiner Expressway East. The strategies and their related financial implications can be further explored through the Alternative Designs stage of the EA.

The Hybrid and Remove alternatives have been developed at a preliminary level of detail for EA comparative purposes. While the level of detail is greater than customary for an Alternative Solutions stage of an EA, these alternatives could be further developed in a number of ways. This report has presented additional information on some of these possible variations, including strategies to reduce Hybrid's impact on the Keating Precinct, as well as the travel time delays of the Remove alternative. Strategies that have been explored include Hybrid without new Gardiner ramps at Cherry Street, the provision of only one new westbound on-ramp at Cherry Street, and improvements at existing Gardiner ramps (e.g., Jarvis westbound on-ramp). This report also examines a possible 10-lane configuration for Lake Shore Boulevard, the use of pedestrian overpasses, and other available measures to reduce travel time increases for Remove. These strategies, as well as other possible design options and their financial implications, would be explored

in the Alternative Designs stage of the EA following Council's identification of a preferred EA solution.

This report was prepared by the City's Waterfront Secretariat in conjunction with Transportation Services, Corporate Finance, Financial Planning, City Planning, Economic Development and Culture, and Waterfront Toronto. Information about the Gardiner East EA can be found on the project web site at www.gardinereast.ca

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